5:Cooper E-4 (no date) 1946 SG4 Araucanians SG4

301 to fasten the skull. Glass beads, chaquiras, were early imported by the Spaniards, and later displaced the aboriginal llancas. The characteristic large quadrangular metal ear pendants (chapell, tupil) are clearly recorded as early as the middle of the 17th century (Rosales, 1877–78, 1:159); the wheel-shaped ones, still earlier (González de Nájera, 1889, p. 47).

In the 19th century, the number and variety of silver and beaded women's adornments (as described in detail by, e. g., Moesbach, 1936, pp. 213–14, and others)—necklaces, bracelets, anklets, finger rings, ear pendants, brooches, buckles, and so forth—was very great. In general, however, this represents the final phase of a gradual evolution from a much simpler style of women's adornment current at the time of first White contact, an evolution marked by the substitution of glass chaquiras (beads) for the native llancas, by more and more widespread use of silver, and by the luxuriant growth of new forms of both bead and silver "jewelry."

TRANSPORTATION

491 **Land transportation.**—There were no roads such as were common in *Inca* territory, but only trails. Bridges (kuikui) consisted merely of a log or several logs spanning small streams. The tumpline and 482 fiber bag of simple-loop netting technique were used for carrying goods. 492 The llama served as a pack animal; the dog was not so used. Soon after the coming of the Spaniard, the *Mapuche-Huilliche* took to horse riding. (Cf. supra under Domesticated Animals, p. 704).

501 **Water transportation.**—Three chief types of watercraft were used by the *Mapuche-Huilliche:* the plank boat, the dugout, and the reed balsa. As Lothrop (1932, p. 253) points out, all three were more or less crescent or new-moon shaped, with raised and pointed bow and stern.

Plank boats (dalca, piragua) of 3 planks were found in large number among the *Araucanian*-speaking people of Coronados Gulf when first encountered by Cortés Hojea in 1558 (Goicoeta, 1852, p. 91). Plank boats, while more characteristic of the Chilotans and southern mainland *Huilliche*, were also observed farther north (Ota, canto 10, 1917, [284] p. 349, mouth of the Bio-Bio River). The planks were lashed together [284] with fiber rope (of *Chusquea* sp.), which does not rot under water, and caulked with leaves of tiaca (*Caldcluvia paniculata*, according to Medina, 1882, p. 193) and inner bark of maqui (*Aristotelia maqui*). They were propelled by about 8 to 12 rowers, a coxswain steering at the stern with a pole or paddle. In a favorable wind, a sail was set up. Up to the end of the 17th century, the dalca was of only 3 planks, but, in the course of the 18th century, it developed into a 5-plank (Olivares, 1874, p. 371) and later a 7-plank craft. (González de Agüeros, 1791,

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p. 66; Cooper, 1917, pp. 198-99; cf. Lothrop, 1932, pl. 21, *c-d*, and fig. 8, with details of construction of 7-plank dalca.)

Dugouts (huampo, wampu (L. de Valdivia, 1887, huampu), canoa) were according to Rosales (1877–78, 1:174) usually small, with a crew of three men; the largest he had ever seen was one in Toltén with a carrying capacity of 30 persons. Of a crew of three, one man seated at the stern steered with a paddle, the other two paddled standing. Such dugouts were early reported from the Imperial (Bascuñan, 1863, p. 89) region. (Cf. illustration from Gay, in Lothrop, 1932, pl. 16, *b*.)

Balsas of cigar-shaped bundles of various kinds of reeds, lashed with ropes made of voqui, and of new-moon shape, pointed at both ends, were in use on the mainland around the Imperial River, Toltén River, and elsewhere, and on the islands of Santa María and Mocha.

Other "balsas," apparently rafts proper, made of *Puya* sp. or of "cypress" (*Libocedrus chilensis*) or "laurel" (*Laurelia aromatica*), all very light and buoyant, were also used on the Island of Santa María and on the mainland. The watercraft of inflated sealskins, of the north-central Chilean Coast, has not been reported from the *Mapuche-Huilliche* region.

Sails are reported as early as the middle 17th century, by Rosales (1877–78, 1:178), with the dugout when the wind was favorable, but it is uncertain whether they were used in pre-Spanish days (Friederici, 1907, p. 74). Details on type or types of paddles or oars used with early *Mapuche-Huilliche* watercraft are lacking. Lothrop (1932, p. 245, pl. 21, *b*) describes and figures a [European type?] two-piece oar with crutchless rounded shaft and flat square-ended blade, used with a Chilotan plank boat. Double-bladed paddles have been reported occasionally (Lenz, 1934).

MANUFACTURES

Basketry.—Various kinds of basketry containers were woven from plant fibers. Some of these more commonly recorded are: The loyo, made of *Chusquea*, of very fine weave; the chaiwe, made of voqui (*Boquila trifoliata*), small, serving as a filter for chicha or as a sieve or colander; the lleptí (fig. 74, *left*), of *Chusquea*, of flat round platter form; the kilko (fig. 74, *right*), of *Lapageria rosea*, a large basket; the yolo, of bejuco. (For techniques and types, cf. Claude Joseph, 1931, pp. 241–244.)

Cordage.—Various plant fibers, particularly from flocha (*Greigia landbeckii*) or molkachu (*Cyperus rupestus*), were used in the making of rope, cord, fish nets and lines, carrying bags (pilua), and baskets (figs. 75, 76). (For details, cf. Claude Joseph, 1931, pp. 244–246.)

Spinning and weaving.—Weaving with llama wool was well developed at the time of the Contact. Sheep wool was later substi-

10: Hilger E-5 (1946-1952) 1957
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Sheep, and transportation: 1, A flock of sheep in Cotaripe. 2, Transportation by oxcart (Alepúe). (Note wheels of tree-trunk sections.) 3, Dugout used in transporting persons across the Río Llanquihue in Cotaripe.

[p. 172 (G)]

10: Hilger E-5 (1946-1952) 1957
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[501]

Fishing in the Pacific Ocean (Alepie): 1, Two fishermen landing their boat. 2, Their day's catch—a disappointing one. 3, Fish being cured on lines in air and sun.

[p.172(H)]

10: Hilger E-5 (1946-1952) 1957
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Oxcarts are of wood; unless a tree can be found with proper wheels and they are available. (Pls. 39, 3; 40, 2.) Sometimes a man makes his own oxcart; just as often he has it made by another for "one must have both intelligence and implements with which to make them." In all areas, most oxcart wheels were made of cross sections of tree trunks. A Cañaripe man, who made his own cart used cross sections of laurel común. "The radius of the tree," he noted, "will tell how high the cart will stand above the ground. It is important to note this, for the middle of the cart is balanced on the wheels. One must think of those deep ruts in the trails on rainy days; everything on the cart can get muddy if the wheels are too low; and the haul can spill out if the cart is dragged along on its axle. It took me two days to make the two wheels." Each wheel was 31 inches in diameter and 6 inches wide; the hub was 8 inches in diameter. The length of his entire cart was 16 feet; its greatest width, near the back end, 4 feet. Parts were fastened together with voqui of culhile (koiwe); no nails were used. Two long pieces of wood, to which boards forming the platform of the cart were fastened, extended forward and formed the shaft. When hitching the oxen to a cart, their horns are fastened to the shaft with leather straps; the yoke is then fastened close to the end of the shaft (pl. 39, 1). Since oxen will follow an oxcart trail, the driver usually sits in the cart urging slow-moving oxen on by poking their sides with a pole. Off the trail, however, the driver leads the oxen by walking in front, holding a pole, one end of which he rests on the yoke. (Pl. 39, 2 and 3.) If he wishes the oxen to turn right, he taps the yoke on the right with the pole; if to the left, on the left of the yoke.

A log is hitched with chains or leather thongs to the yoke of a pair of oxen and thus dragged to its destination between the oxen (pl. 39, 2).

Cooper's sources (1946, pp. 712-713) report three chief types of water craft; the plank boat, the dugout, and the balsa. All were more or less crescent or new-moon shaped, with raised and pointed bow and stern. Plank boats were lashed together with fiber rope (of *Chusquea* sp.) and caulked with leaves of tiaca and the inner bark of maqui. Dugouts were paddled, or driven by sails when the wind was favorable. Balsas were cigar-shaped bundles of various kinds of reeds, lashed with ropes made of voqui. Other balsas, very light and buoyant, apparently rafts proper, were made of *Poya* sp., *Libocedrus chilensis* (ciprés), or *Laurelia aromatica* (laurel común). All three types of water craft were seen during the present study, but none was crescent shaped. The plank boat with sails, called fote (probably adapted from the Spanish bote), was used in Alepún area when fishing

10: Hilger E-5 (1946-1952) 1957
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501 In the Pacific (pl. 42, *1*); the dugout (waapo; Spanish, canoe) (pl. 40, *3*) and the raft, the balsa (taqi), were used in Cañaripe area to transport persons and loads across rivers.

491 In all areas rivers were forded on foot, on horseback, and in carreta. Bridges were found only where roads had been built by the Chilean Government or by private lumbering firms. Creeks were forded on foot or were crossed on footbridges consisting of one or several logs at convenient places.

484 [463] It is a man's duty, in general, to do the family selling, buying, and trading; consequently men travel greater distances than do women and children. A few men informants of all areas had traveled as far as Santiago (a day and night trip on a local train); no women had. All men informants had been to the largest trading center near their area: for Alepún area, Valdivia (45,000 population); for Pangipulli and Cañaripe areas, Villarrica (4,600); for Ilihuca area, Nueva Imperial (6,600). Many women in Ilihuca had been to Nueva Imperial, their nearest large city; only a few women in Alepún, Pangipulli, and Cañaripe areas had been to their respective large centers. Of 21 children in an Alepún school, all but one girl had been to San José de Mariquina, the nearest trading center, a distance of 3 to 4 hours on horseback. Half of the boys had been to Lanco, a greater distance; one-third, to Lanco̱che, still farther away; but none of the girls had been to either of these places.

TRADE, EXCHANGE, AND CURRENCY

437 Bartering, as in former days, is still the prevailing form of trade among the Araucanians themselves. "When we were married, we were very poor," said a 60-year-old Cañaripe woman. "We cleared a piece of land and planted wheat in it. At harvest time I exchanged for cows and sheep with Mapuche around here, who were in need of wheat, all the wheat that we could spare. Soon we had a number of animals, and that is how we got our start." A man in the same area exchanged a horse for two and a half sacks of wheat—a sack approximated a hundred kilograms. A woman was seen exchanging sugar for both wheat and flour; another paid for yerba maté with a hen. Children in all areas were seen bartering, among themselves, such things as marbles for toys, pencils for paper, tortillas for other things.

426 Borrowing, too, was done in all areas. Such needed things as axes, hoes, screwdrivers, plows, carreta, hats, needles, kettles, were being borrowed. Unfailingly things borrowed were returned. Families helped each other out with sugar and flour; equal amounts were returned when a new supply was obtained.